

NOTES ON MARINE MOLLUSKS FROM THE YUCATAN PENINSULA,
MEXICO

BY NORMAN E. WEISBORD

The Yucatan peninsula, jutting out as it does, into the warm waters of the Gulf of Mexico and the Caribbean sea, affords an admirable site for the accumulation of a profuse molluscan life, and what with the stormy and heavy surf during the months of October to February (caused by the prevailing north winds or *nortes* as they are called) piling the shells on shore, the beaches are literally and "littorally" covered with marine Mollusca; the fauna, however, is more abundant than diverse. The sands along the entire coast are composed of the fragments of broken and disintegrated shells and hence is nearly pure lime with but little silica or other minerals present. The fauna is typical of that found in the southern Gulf regions and appertains nearly exclusively to the Caribbean province although a few forms are known to be also Panamic in distribution. Nearly all of the species occur in the West Indies, while many are common to Florida and northern South America.

Opportunity for collection was afforded during the course of geologic reconnaissance of the peninsula. Following are the localities from which the specimens were obtained:

Progreso, Yucatan.

Campeche, Campeche.

San Lorenzo, Campeche.

Seibaplaya, Campeche.

Chenkan, Campeche.

Between Chenkan and Sabancuy, Campeche.

Very Cruz, Vera Cruz.

With the exception of that at Campeche, which is rather rocky and covered with weeds, the beaches are all uniformly sandy. Throughout, the character of the fauna is fairly constant, though a number of species are more abundant in some localities than in others. Thus at Progreso *Chione cancellata* Linné is found by the thousands, but a short distance from it or

more to the west and south, the form is superseded by other more prominent ones. *Strombus pugilis* Linné is rare at Progreso but very abundant at San Lorenzo and to the southwest of Seibaplaya. The great majority of *Cerithia* were found at Campeche where they abound amongst the rocks which are shallowly covered with water. *Labiosa (Raeta) canaliculata* Say occurs south of Chenkan but I have seen it north of there but rarely. This alternate sporadic and profuse occurrence of certain forms is due to local variations in habitat.

The ancient Mayas, whose remnants of a superior civilization are still extant, used some of these shells as offerings to their gods. In dredgings from the sacred well at Chichen-Itza I found several fragments of *Marginella* together with the jade, copper and golden trinkets which were thrown in with the sacrificed virgins. Legend tells us that before casting these various tokens into the water they were slightly chipped or broken so as not to rival the perfection of the virgins.

For determinations I have drawn freely on the works of Dall, Tryon, Baker and Maury, the latter having recently revised the nomenclature of the Gulf species.

The following forms have been collected:

- Arca occidentalis* Philippi. Progreso, San Lorenzo, Chenkan, near Sabancuy.
- Arca umbonata* Lamarek. Fairly common along the entire coast but locally more abundant at Progreso, Chenkan and Sabancuy.
- Arca (Barbatia) adamsi* (Shuttleworth) Smith. Rare, Progreso, San Lorenzo, Chenkan.
- Arca (Noetia) ponderosa* Say. Not uncommon along the coast.
- Arca (Scapharca) secticostata* Reeve. Rare, Progreso, Chenkan, Sabancuy.
- Arca (Scapharca) auriculata* Lamarek. Progreso, Sabancuy.
- Arca (Scapharca) transversa* Say. Abundant. The larger forms are more quadrate than the smaller ones.
- Arca (Argina) campechensis* Gmelin. One specimen from Campeche.
- Glycymeris pectinata* Gmelin. Chenkan, Sabancuy.

- Ostrea cristata* Born. Campeche.
- Pecten (Plagioctenium) gibbus* Linne. Not a common shell as in other localities, Chenkan.
- Pecten (Chlamys) ornatu*s Lamarek. A single specimen from near Sabancuy.
- Plicatula gibbosa* Lamarek. Common.
- Anomia simplex* D'Orbigny. Progreso, Chenkan.
- Mytilus (Hormomya) exustus* Linne. Several immature specimens, Campeche, San Lorenzo.
- Cardita (Carditamera) floridana* Conrad. Very abundant and vari-colored.
- Chama macrophylla* Gmelin. Progreso, Chenkan, near Sabancuy.
- Echinochama arcinella* Linne. Abundant at Chenkan.
- Lucina chrystostoma* (Meuschen) Philippi. Between Chenkan and Sabancuy.
- Codakia orbicularis* Linne. Several very large specimens, Progreso, Sabancuy.
- Codakia (Jagonia) orbiculata* Montagu. A single shell from San Lorenzo.
- Phacoides pectinatus* Gmelin. Commonly known as *Lucina jamaicensis*. Campeche, Sabancuy.
- Phacoides (Lucinisca) nassula* Conrad. Rare, Progreso.
- Cardium (Trachycardium) isocardia* Linne. Progreso, Campeche, Chenkan, Sabancuy.
- Cardium (Cerastoderma) robustum* Solander. Progreso.
- Cardium (Fragum) medium* Linne. One specimen from Chenkan.
- Cardium (Laevicardium) serratum* Linne. Some of the forms are very highly colored, Campeche, Chenkan, Sabancuy.
- Cardium (Laevicardium) serratum* var. *laevigatum* Lamarek. More quadrate than typical *serratum*. Campeche, Chenkan.
- Dosinia (Dosinidia) elegans* Conrad. Chenkan, Sabancuy.
- Macrocallista maculata* Linne. Very variable in size and coloration. Progreso, Chenkan, Sabancuy.
- Antigona listeri* Gray. Rare, Chenkan.



- Chione cancellata* Linne. Extremely abundant along the coast.
- Anomalocardia brasiliana* Gmelin. Progreso, Campeche (common), Sabancuy. Usually labeled *A. flexuosa* Born. Variable in the amount of posterior attenuation and character of ribbing.
- Venus campechiensis* Gmelin. Progreso, Chenkan, near Sabancuy.
- Petricola (Rupellaria) typica* Jonas. A single imperfect specimen from San Lorenzo.
- Tellina lineata* Turton. Campeche (rare), Chenkan, between Chenkan and Sabancuy. Colored either white or dark pink.
- Macoma (Cydippina) brevifrons* Say. Rare, Chenkan.
- Semele proficua* Pulteney. Scarce, near Sabancuy.
- Semele purpurascens*. Scarce, near Sabancuy. Characterized by its oblique incisions.
- Donax variabilis* Say. Uncommon, Chenkan.
- Mulinia lateralis* Say. Fairly abundant toward the south of the peninsula, Chenkan to Sabancuy. Somewhat thinner shelled and more elongated than the more northerly shells.
- Labiosa (Raeta) canaliculata* Say. Near Sabancuy.
- Bullaria occidentalis* Adams. Progreso, Campeche, Chenkan, Sabancuy.
- Bullaria striata* Bruguiere. Differs from *B. occidentalis* Adams in having a more widely open umbilicus and with both ends of the shell concentrically striated.
- Melampus coffeus* Linne. Rare, Campeche, San Lorenzo.
- Terebra (Hastula) cinerea* Born. Two worn specimens, Chenkan.
- Conus floridanus* Gabb. Progreso, Chenkan, Sabancuy.
- Conus proteus* Hwass. Progreso, Chenkan, Sabancuy, south of Seibaplaya.
- Conus verrucosus?* Hwass. Several immature and imperfect specimens in the collection may be referable to this species.
- Drillia (Crassispira) harfordiana* Reeve. Chenkan. Also more widely known from Panama. I cannot distinguish

any differences between the Yucatan shell from that of Panama with perhaps the exception of a slight variance in coloration. Not unlike *D. albinodata* and others of the *D. zebra* group but much larger.

Cancellaria reticulata Linne. Chenkan, near Sabancuy.

Cancellaria (Trigonostoma) tenera Dall. Rare, Chenkan.

Oliva litterata Lamarek. Campeche, Chenkan, Sabancuy.

Considered as synonymous with *O. circinata* Lamarek by Maury.

Olivella nivea Gmelin. Rare, Chenkan, Sabancuy.

Marginella apicina Menke. Progreso, Campeche, Chenkan, near Sabancuy.

Marginella guttata Dillwyn. Common, Progreso, Campeche, Chenkan, between Chenkan and Sabancuy.

Marginella labiata Valenciennes. Abundant all along the coast.

Marginella oblonga Swainson. Scarce, Progreso, Chenkan.

Marginella (Volvaria) avena Valenciennes. Rare, Chenkan.

Turbinella scolymus Gmelin. Young forms from Progreso, Chenkan and Sabancuy.

Mitra (Pusia) gemmata Sowerby. Campeche. A rare and prettily colored shell.

Fasciolaria tulipa Linne. Progreso, Chenkan, near Sabancuy.

Leucozonia cingulifera Lamarek. Chenkan, Sabancuy. Variable in attenuation of spire and nodulation.

Busycon pyrum Dillwyn. Progreso, Chenkan, Sabancuy.

Busycon perversus Linne. Progreso, Campeche, Chenkan, between Chenkan and Sabancuy.

Melongena corona Gmelin. Campeche.

Cantharus tinctus Conrad. Chenkan.

Alectrion vibex Say. Chenkan.

Alectrion ambigua? Montagu. One worn shell, Campeche.

Columbella avara Say. Rare, Progreso.

Columbella mercatoria Lamarek. Abundant along the coast.

Murex (Phyllonotus) pomum Gmelin. Progreso, Chenkan, Sabancuy.

Murex (Chicoreus) salleanus Adams. A single shell from Chenkan.

- Muricidea floridana* Conrad. Campeche. Maury considers this synonymous with *M. ostrearum* Conrad.
- Trivia suffusa* Gray. Progreso.
- Pyrula papyratia* Say. Rare, Chenkan.
- Strombus pugilis* Linne. Campeche, Chenkan, south of Seiboplaya (abundant and very highly colored), San Lorenzo, near Sabancuy. Not as prominently spinose as the northern varieties.
- Strombus gigas* Linne. Progreso.
- Cerithium algicola* Adams. Campeche.
- Cerithium atratum* Born. Progreso, Chenkan, near Sabancuy.
- Cerithium ferruginem* Say. Campeche, Chenkan.
- Cerithium minimum septemstriatum* Say. Campeche.
- Cerithium minimum nigrescens* Menke. Campeche.
- Cerithium minimum* Gmelin. Campeche.
- Cerithium variabile* Adams. Campeche, Chenkan, between Chenkan and Sabancuy.
- Modulus modulus* Linne. Campeche.
- Vermicularia spirata* Philippi. Chenkan, near Sabancuy.
- Crepidula fornicata* Linne. Progreso, Chenkan, Sabancuy.
- Crepidula alculeata* Gmelin. Progreso, Chenkan, San Lorenzo.
- Crepidula plana* Say. Rare, Progreso.
- Crucibulum verrucosum?* Reeve. This form is found abundantly along the coast but am not assured of its identity with the above.
- Natica canrena* (Linne) Morch. Chenkan, Sabancuy.
- Polynices (Neverita) duplicata* Say. Chenkan, between Chenkan and Sabancuy.
- Sinum perspectivum* Say. Scarce, Chenkan.
- Turbo castaneus* Gmelin. Rare, Progreso, Chenkan.
- Astralium cubanum* Philippi. Near Sabancuy. Closely allied to *A. olfersi* and *A. americanum*.
- Astralium longispinum* Lamarek. Progreso, Chenkan.
- Nerita tessellata* Gmelin. Very abundant especially around Lerma where it is collected by fishmongers and used as food.
- Chlorostoma (Omphalius) fasciatum* Born. Campeche, Chenkan.

- Lucapinella limatula* Reeve. Uncommon, Chenkan.
Fissuridea alternata Say. Progreso, Chenkan, near Sabancuy.
Fissuridea alternata Say var. *dysoni* Reeve. Chenkan, Sabancuy.
Submarginula octoradiata (Gmelin) Adams. Scarce, Campeche, San Lorenzo.

UNIONIDAE FROM THE REELFOOT LAKE REGION IN WEST TENNESSEE

BY DR. A. E. ORTMANN

The following report is founded primarily upon the collections made by the writer during the "Geo. H. Clapp Expedition to Reelfoot Lake" of the Carnegie Museum in August, 1924. It includes localities in Reelfoot Lake proper;¹ further

¹ Blue Basin, Lake Co. (N. W. shore); Bluebank, Lake Co. (South end); and Samburg, Obion Co. (East shore).

in the Bayou de Chien, Walnut Log, Obion Co. (tributary entering the lake near its northern end; and North Fork Obion River, Union City, Obion Co. (a tributary of the Mississippi receiving the waters of Reelfoot Lake).

This material was supplemented by specimens collected in July, 1925, in the lake (near Samburg) by Mr. Steven B. Crossley, who acted as guide during the expedition of 1924. The latter specimens arrived in part alive.

From this region we possess only one previous list of mussels, collected by S. N. Rhoads in 1895, and published by H. A. Pilsbry and S. N. Rhoads (P. & R.) (Proc. Acad. Philadelphia 48, 1896, pp. 500-506). The Reelfoot Lake shells of this list are from Samburg, Obion Co.; but there are a few also from Wolf River, Raleigh, Shelby Co. (near Memphis), a locality probably with ecological conditions similar to those of Obion River. Most of the species of this list have been found by myself, and several have been added. The following enumeration includes all forms known from these western parts of Tennessee (Mississippi Embayment and Mississippi Bottoms).